

SUPPORT FOR THE AMENDMENTS

Applicants have amended Claim 4 to incorporate the limitation of canceled Claim 7. Accordingly, support for amended Claim 4 can be found in Claims 4 and 7, as previously presented. Applicants have also amended Claim 15 to obviate the criticism outlined on page 2 of the Office Action. Support for amended Claim 15 can be found in the same claim, as previously presented, and on page 9, lines 22-25, of the specification.

Claim 16 has been rewritten in independent form. Support for amended Claim 16 can be found in Claims 4 and 16, as previously presented. Applicants have also added new Claims 22-25. Support for new Claims 22-25 can be found Claims 8-10 and 13, as previously presented.

No new matter has been added. Claims 4 and 8-25 are active in this application.

REMARKS/ARGUMENTS

At the outset, Applicants wish to thank Examiner Sample for indicating that Claim 16 was merely objected to as depending on a rejected base claim and would be allowable if rewritten in independent form. Applicants submit that, in view of the present amendments and remarks, all of the pending claims are now allowable.

Present Claims 4 and 8-15 and 17-21 relate to processes for producing a synthetic quartz powder which involve hydrolyzing an alkoxysilane to obtain a silica gel having an average particle diameter of from 10 to 500 μm and bringing the silica gel into contact with at least one of helium and hydrogen gas at a temperature of from 400°C to 1,300°C, in which before or after bringing the silica gel into contact with at least one of helium and hydrogen gas, the silica gel is heat-treated at a temperature of 1,000°C or higher for from 10 to 50 hours in an oxygen-containing atmosphere, and

in which the synthetic quartz powder, upon heating from room temperature to 1,700°C, generates gases in which the amount of CO is 300 nl/g or smaller and the amount of CO₂ is 30 nl/g or smaller.

Present Claims 16 and 22-25 relate to processes for producing a synthetic quartz powder which involve hydrolyzing an alkoxysilane to obtain a silica gel having an average particle diameter of from 10 to 500 µm and bringing the silica gel into contact with at least one of helium and hydrogen gas at a temperature of from 400°C to 1,300°C, in which before or after bringing the silica gel into contact with at least one of helium and hydrogen gas, the silica gel is heat-treated at a temperature of 1,000°C or higher for from 10 to 50 hours in an oxygen-containing atmosphere, and in which the silica gel is brought into contact with pure helium.

As explained in the present specification, the inventors have discovered that by carrying out the present process it is possible to obtain very pure synthetic quartz powders. In particular, as now recited in currently amended Claim 4, when the synthetic quartz powder is heated from room temperature to 1,700°C, it generates gases in which the amount of CO is 300 nl/g or smaller and the amount of CO₂ is 30 nl/g or smaller.

The cited prior art does not disclose or suggest the production of such a synthetic quartz powder. Accordingly, the cited reference cannot affect the patentability of the present claims.

The rejection of Claims 4, 7-14, and 17-21 under 35 U.S.C. §102(b), in view of U.S. Patent No. 6,129,899 (Katsuro et al) is respectfully traversed. Katsuro et al discloses a method for producing synthetic quartz powders. However, as conceded on page 3 of the Office Action, Katsuro et al conducts the heat treatment in air.

Moreover, there is no disclosure of the production of a synthetic quartz powder, which when heated from room temperature to 1,700°C, generates gases in which the amount of CO is 300 nl/g or smaller and the amount of CO₂ is 30 nl/g or smaller. In fact, as explained on pages 2-4 of the present specification, it is not possible to achieve such a synthetic quartz powder by means of the processes of the prior art.

In support of the position that it is not possible to achieve a synthetic quartz powder, which when heated from room temperature to 1,700°C, generates gases in which the amount of CO is 300 nl/g or smaller and the amount of CO₂ is 30 nl/g or smaller, when the contact with at least one of helium and hydrogen gas is omitted, Applicants direct the Examiner's attention to the results for Comparative Example 1, given on page 22 of the present specification, which are presented in Table 1 on page 21 of the present specification. As shown by the results for Comparative Example 1 in Table 1, when the contacting with at least one of helium and hydrogen gas is omitted, the amounts of CO and CO₂ which are generated upon heating are greater than when such a step is included in the preparation.

There is nothing in the cited reference which would remotely suggest that such a product could be obtained by heating in air such as disclosed in Katsuro et al. Thus, this reference can neither anticipate nor make obvious present Claim 4 and the claims dependent thereon. Accordingly, the rejection should be withdrawn.

Applicants submit that Claims 16 and 22-25 are now allowable for the reasons set out in the paragraph bridging pages 3 and 4 of the Office Action.

The rejection of Claim 15 under 35 U.S.C. § 112, first paragraph, has been obviated by appropriate amendment. As the Examiner will note, Applicants have amended Claim 15 such that it is free of the criticism outlined on page 2 of the Office Action. Accordingly, the rejection is no longer tenable and should be withdrawn.

Application No. 10/758,395
Reply to Office Action dated August 17, 2005

Applicants submit that the present application is now in condition for allowance, and early notification of such action is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Stephen G. Baxter
Attorney of Record
Registration No. 32,884

Customer Number
22850
Tel: (703) 413-3000
Fax: (703) 413 -2220